



SEQUENCE LISTING

<110> IMMUNEX CORPORATION
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<141> 2001-06-18

<150> PCT/US99/29989

<151> 1999-12-17

<150> 60/113,003

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Glu Val Asp Tyr Glu Ala Ile Arg Ser Glu Met Glu Gln Leu Lys Glu
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Ala Phe Gly Gln Ala His Thr Asn His Lys Lys Val Ala Ala Asp Gly
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Glu Ser Arg Glu Glu Ser Leu Ile Gln Glu Ser Ala Ser Lys Glu Gln
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Tyr Tyr Val Arg Lys Val Leu Glu Leu Gln Thr Glu Leu Lys Gln Leu
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Arg Asn Val Leu Thr Asn Thr Gln Ser Glu Asn Glu Arg Leu Ala Ser
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Gly Arg Leu Arg Asp Asp Ile Lys Glu Tyr Lys Phe Arg Glu Ala Arg
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Lys Gln Val Ser Val Leu Arg Gln Asn Gln Val Glu Phe Glu Gly Leu
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Glu Glu Ala Leu Glu Thr Leu Lys Thr Glu Arg Glu Gln Lys Asn Ser
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Thr Ser His Leu His Val Ser Leu Asp Gly Leu Lys Phe Ser Asp Asp
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Lys Lys Glu Gly Leu Ala Pro Pro Ser Pro Ser Leu Val Ser Asp Leu
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Val	Ser	Ala	Val	Ser	Cys	Ile	His	Lys	Ala	Gly	Ile	Leu	His	Arg	Asp	165	170	175	
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Asp Ser Ser Gln Tyr Ser Leu Glu Leu Ile Gln Met Val His Ser Cys
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Ser Ser Gly Leu Ser Ile Gly Thr Val Phe Gln Ser Ser Ser Pro Gly
740 745 750

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770 775 780

Asp Arg Gly Met Glu Gly Leu Ile Ser Pro Thr Glu Ala Met Gly Asn
785 790 795 800

Ser Asn Gly Ala Ser Ser Ser Cys Pro Gly Trp Leu Arg Lys Glu Leu
805 810 815

Glu Asn Ala Glu Phe Ile Pro Met Pro Asp Ser Pro Ser Pro Leu Ser
820 825 830

Ala Ala Phe Ser Glu Ser Glu Lys Asp Thr Leu Pro Tyr Glu Glu Leu
835 840 845

Gln Gly Leu Lys Val Ala Ser Glu Ala Pro Leu Glu His Lys Pro Gln
850 855 860

Val Glu Ala Ser Ser Pro Arg Leu Asn Pro Ala Val Thr Cys Ala Gly
865 870 875 880

Lys Gly Thr Pro Leu Thr Pro Pro Ala Cys Ala Cys Ser Ser Leu Gln
885 890 895

Val Glu Val Glu Arg Leu Gln Gly Leu Val Leu Lys Cys Leu Ala Glu
900 905 910

Gln Gln Lys Leu Gln Gln Glu Asn Leu Gln Ile Phe Thr Gln Leu Gln
 915 920 925

Lys Leu Asn Lys Lys Leu Glu Gly Gly Gln Gln Val Gly Met His Ser
 930 935 940

Lys Gly Thr Gln Thr Ala Lys Glu Glu Met Glu Met Asp Pro Lys Pro
 945 950 955 960

Asp Leu Asp Ser Asp Ser Trp Cys Leu Leu Gly Thr Asp Ser Cys Arg
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Pro Ser Leu

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 gccctgaatg aactgcagga cg 22

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 cacgggtagc caacgctatg tc 22

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cttccgcttc cacgacactc g

21

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ctcaatggcc tcagacgcca g

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ctccttcagc tcctgggcc

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cgagctgctc tatagactgc tgggtagtcc

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taacagaggt ggcttatgag tatttcttcc

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aaaccacaag aaggtggctg

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aggtgaagcg gctgtccac ga

22

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ctccttcagc tcctgggcca ca

22

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Met Ala Ala Glu Glu Val Leu Gln Thr Val Asp His Tyr Lys Thr Glu
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Ile Glu Arg Leu Thr Lys Glu Leu Thr Glu Thr Thr His Glu Lys Ile
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Gln Ala Ala Glu Tyr Gly Leu Val Val Leu Glu Glu Lys Leu Thr Leu
35 40 45

Lys Gln Gln Tyr Asp Glu Leu Glu Ala Glu Tyr Asp Ser Leu Lys Gln
50 55 60

Glu Leu Glu Gln Leu Lys Glu Ala Phe Gly Gln Ser Phe Ser Ile His
65 70 75 80

Arg Lys Val Ala Glu Asp Gly Glu Thr Arg Glu Glu Thr Leu Leu Gln
85 90 95

Glu Ser Ala Ser Lys Glu Ala Tyr Tyr Leu Gly Lys Ile Leu Glu Met
100 105 110

Gln Asn Glu Leu Lys Gln Ser Arg Ala Val Val Thr Asn Val Gln Ala
115 120 125

Glu Asn Glu Arg Leu Thr Ala Val Val Gln Asp Leu Lys Glu Asn Asn
130 135 140

Glu Met Val Glu Leu Gln Arg Ile Arg Met Lys Asp Glu Ile Arg Glu
145 150 155 160

Tyr Lys Phe Arg Glu Ala Arg Leu Leu Gln Asp Tyr Thr Glu Leu Glu
165 170 175

Glu Glu Asn Ile Thr Leu Gln Lys Leu Val Ser Thr Leu Lys Gln Asn
180 185 190

Gln Val Glu Tyr Glu Gly Leu Lys His Glu Ile Lys Arg Phe Glu Glu
195 200 205

Glu Thr Val Leu Leu Asn Ser Gln Leu Glu Asp Ala Ile Arg Leu Lys
210 215 220

Glu Ile Ala Glu His Gln Leu Glu Glu Ala Leu Glu Thr Leu Lys Asn
225 230 235 240

Glu Arg Glu Gln Lys Asn Asn Leu Arg Lys Glu Leu Ser Gln Tyr Ile
245 250 255

Ser Leu Asn Asp Asn His Ile Ser Ile Ser Val Asp Gly Leu Lys Phe
260 265 270

Ala Glu Asp Gly Ser Glu Pro Asn Asn Asp Asp Lys Met Asn Gly His
275 280 285

Ile His Gly Pro Leu Val Lys Leu Asn Gly Asp Tyr Arg Thr Pro Thr
290 295 300

Leu Arg Lys Gly Glu Ser Leu Asn Pro Val Ser Asp Leu Phe Ser Glu
305 310 315 320

Leu Asn Ile Ser Glu Ile Gln Lys Leu Lys Gln Gln Leu Met Gln Val
325 330 335

Glu Arg Glu Lys Ala Ile Leu Leu Ala Asn Leu Gln Glu Ser Gln Thr
340 345 350

Gln Leu Glu His Thr Lys Gly Ala Leu Thr Glu Gln His Glu Arg Val
355 360 365

His Arg Leu Thr Glu His Val Asn Ala Met Arg Gly Leu Gln Ser Ser
370 375 380

Lys Glu Leu Lys Ala Glu Leu Asp Gly Glu Lys Gly Arg Asp Ser Gly
385 390 395 400

Glu Glu Ala His Asp Tyr Glu Val Asp Ile Asn Gly Leu Glu Ile Leu
405 410 415

Glu Cys Lys Tyr Arg Val Ala Val Thr Glu Val Ile Asp Leu Lys Ala
420 425 430

Glu Ile Lys Ala Leu Lys Glu Lys Tyr Asn Lys Ser Val Glu Asn Tyr
435 440 445

Thr Asp Glu Lys Ala Lys Tyr Glu Ser Lys Ile Gln Met Tyr Asp Glu
450 455 460

Gln Val Thr Ser Leu Glu Lys Thr Thr Lys Glu Ser Gly Glu Lys Met
465 470 475 480

Ala His Met Glu Lys Glu Leu Gln Lys Met Thr Ser Ile Ala Asn Glu
485 490 495

Asn His Ser Thr Leu Asn Thr Ala Gln Asp Glu Leu Val Thr Phe Ser
500 505 510

Glu Glu Leu Ala Gln Leu Tyr His His Val Cys Leu Cys Asn Asn Glu
515 520 525

Thr Pro Asn Arg Val Met Leu Asp Tyr Tyr Arg Gln Ser Arg Val Thr
530 535 540

Arg Ser Gly Ser Leu Lys Gly Pro Asp Asp Pro Arg Gly Leu Leu Ser
545 550 555 560

Pro Arg Leu Ala Arg Arg Gly Val Ser Ser Pro Val Glu Thr Arg Thr
565 570 575

Ser Ser Glu Pro Val Ala Lys Glu Ser Thr Glu Pro Ser Lys Glu Pro
580 585 590

Ser Pro Thr Lys Thr Pro Thr Ile Ser Pro Val Ile Thr Ala Pro Pro
595 600 605

Ser Ser Pro Val Leu Asp Thr Ser Asp Ile Arg Lys Glu Pro Met Asn
610 615 620

Ile Tyr Asn Leu Asn Ala Ile Ile Arg Asp Gln Ile Lys His Leu Gln
625 630 635 640

Lys Ala Val Asp Arg Ser Leu Gln Leu Ser Arg Gln Arg Ala Ala Ala
645 650 655

Arg Glu Leu Ala Pro Met Ile Asp Lys Asp Lys Glu Ala Leu Met Glu
660 665 670

Glu Ile Leu Lys Leu Lys Ser Leu Leu Ser Thr Lys Arg Glu Gln Ile
675 680 685

Ala Thr Leu Arg Ala Val Leu Lys Ala Asn Lys Gln Thr Ala Glu Val
690 695 700

Ala Leu Ala Asn Leu Lys Asn Lys Tyr Glu Asn Glu Lys Ala Met Val
705 710 715 720

Thr Glu Thr Met Thr Lys Leu Arg Asn Glu Leu Lys Ala Leu Lys Glu
725 730 735

Asp Ala Ala Thr Phe Ser Ser Leu Arg Thr Met Phe Ala Thr Arg Cys
740 745 750

Asp Glu Tyr Val Thr Gln Leu Asp Glu Met Gln Arg Gln Leu Ala Ala
755 760 765

Ala Glu Asp Glu Lys Lys Thr Leu Asn Thr Leu Leu Arg Met Ala Ile
770 775 780

Gln Gln Lys Leu Ala Leu Thr Gln Arg Leu Glu Asp Leu Glu Phe Asp

785

790

795

800

His Glu Gln Ser Arg Arg Ser Lys Gly Lys Leu Gly Lys Ser Lys Ile
805 810 815

Gly Ser Pro Lys Val
820

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Asn Thr His Leu Glu Ala Gln Leu Gln Lys Ala Glu Glu Ala Gly Ala
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Glu Leu Gln Ala Asp Leu Arg Asp Ile Gln Glu Glu Lys Glu Glu Ile
20 25 30

Gln Lys Lys Leu Ser Glu Ser Arg His Gln Gln Glu Ala Ala Thr Thr
35 40 45

Gln Leu Glu Gln Leu His Gln Glu Ala Lys Arg Gln Glu Glu Val Leu
50 55 60

Ala Arg Ala Val Gln Glu Lys Glu Ala Leu Val Arg Glu Lys Ala Ala
65 70 75 80

Leu Glu Val Arg Leu Gln Ala Val Glu Arg Asp Arg Gln Asp Leu Ala
85 90 95

Glu Gln Leu Gln Gly Leu Ser Ser Ala Lys Glu Leu Leu Glu Ser Ser
100 105 110

Leu Phe Glu Ala Gln Gln Gln Asn Ser Val Ile Glu Val Thr Lys Gly
115 120 125

Gln Leu Glu Val Gln Ile Gln Thr Val Thr Gln Ala Lys Glu Val Ile
130 135 140

Gln Gly Glu Val Arg Cys Leu Lys Leu Glu Leu Asp Thr Glu Arg Ser
145 150 155 160

Gln Ala Glu Gln Glu Arg Asp Ala Ala Ala Arg Gln Leu Ala Gln Ala
165 170 175

Glu Gln Glu Gly Lys Thr Ala Leu Glu Gln Gln Lys Ala Ala His Glu
180 185 190

Lys Glu Val Asn Gln Leu Arg Glu Lys Trp Glu Lys Glu Arg Ser Trp
195 200 205

His Gln Gln Glu Leu Ala Lys Ala Leu Glu Ser Leu Glu Arg Glu Lys
210 215 220

Met Glu Leu Glu Met Arg Leu Lys Glu Gln Gln Thr Glu Met Glu Ala
225 230 235 240

Ile Gln Ala Gln Arg Glu Glu Glu Arg Thr Gln Ala Glu Ser Ala Leu
245 250 255

Cys Gln Met Gln Leu Glu Thr Glu Lys Glu Arg Val Ser Leu Leu Glu
260 265 270

Thr Leu Leu Gln Thr Gln Lys Glu Leu Ala Asp Ala Ser Gln Gln Leu
275 280 285

Glu Arg Leu Arg Gln Asp Met Lys Val Gln Lys Leu Lys Glu Gln Glu
290 295 300

Thr Thr Gly Ile Leu Gln Thr Gln Leu Gln Glu Ala Gln Arg Glu Leu
305 310 315 320

Lys Glu Ala Ala Arg Gln His Arg Asp Asp Leu Ala Ala Leu Gln Glu
325 330 335

Glu Ser Ser Ser Leu Leu Gln Asp Lys Met Asp Leu Gln Lys Gln Val
340 345 350

Glu Asp Leu Lys Ser Gln Leu Val Ala Gln Asp Asp Ser Gln Arg Leu
355 360 365

Val Glu Gln Glu Val Gln Glu Lys Leu Arg Glu Thr Gln Glu Tyr Asn
370 375 380

Arg Ile Gln Lys Glu Leu Glu Arg Glu Lys Ala Ser Leu Thr Leu Ser
385 390 395 400

Leu Met Glu Lys Glu Gln Arg Leu Leu Val Leu Gln Glu Ala Asp Ser
405 410 415

Ile Arg Gln Gln Glu Leu Ser Ala Leu Arg Gln Asp Met Gln Glu Ala
420 425 430

Gln Gly Glu Gln Lys Glu Leu Ser Ala Gln Met Glu Leu Leu Arg Gln
435 440 445

Glu Val Lys Glu Lys Glu Ala Asp Phe Leu Ala Gln Glu Ala Gln Leu
450 455 460

Leu Glu Glu Leu Glu Ala Ser His Ile Thr Glu Gln Gln Leu Arg Ala
465 470 475 480

Ser Leu Trp Ala Gln Glu Ala Lys Ala Ala Gln Leu Gln Leu Arg Leu
485 490 495

Arg Ser Thr Glu Ser Gln Leu Glu Ala Leu Ala Ala Glu Gln Gln Pro
500 505 510

Gly Asn Gln Ala Gln Ala Gln Ala Gln Leu Ala Ser Leu Tyr Ser Ala
515 520 525

Leu Gln Gln Ala Leu Gly Ser Val Cys Glu Ser Arg Pro Glu Leu Ser
530 535 540

Gly Gly Gly Asp Ser Ala Pro Ser Val Trp Gly Leu Glu Pro Asp Gln
545 550 555 560

Asn Gly Ala Arg Ser Leu Phe Lys Arg Gly Pro Leu Leu Thr Ala Leu
565 570 575

Ser Ala Glu Ala Val Ala Ser Ala Leu His Lys Leu His Gln Asp Leu
580 585 590

Trp Lys Thr Gln Gln Thr Arg Asp Val Leu Arg Asp Gln Val Gln Lys
595 600 605

Leu Glu Glu Arg Leu Thr Asp Thr Glu Ala Glu Lys Ser Gln Val His

610					615					620					
Thr	Glu	Leu	Gln	Asp	Leu	Gln	Arg	Gln	Leu	Ser	Gln	Asn	Gln	Glu	Glu
625					630					635					640
Lys	Ser	Lys	Trp	Glu	Gly	Lys	Gln	Asn	Ser	Leu	Glu	Ser	Glu	Leu	Met
				645					650					655	
Glu	Leu	His	Glu	Thr	Met	Ala	Ser	Leu	Gln	Ser	Arg	Leu	Arg	Arg	Ala
			660					665					670		
Glu	Leu	Gln	Arg	Met	Glu	Ala	Gln	Gly	Glu	Arg	Glu	Leu	Leu	Gln	Ala
			675				680						685		
Ala	Lys	Glu	Asn	Leu	Thr	Ala	Gln	Val	Glu	His	Leu	Gln	Ala	Ala	Val
	690					695					700				
Val	Glu	Ala	Arg	Ala	Gln	Ala	Ser	Ala	Ala	Gly	Ile	Leu	Glu	Glu	Asp
705				710						715					720
Leu	Arg	Thr	Ala	Arg	Ser	Ala	Leu	Lys	Leu	Lys	Asn	Glu	Glu	Val	Glu
				725					730					735	
Ser	Glu	Arg	Glu	Arg	Ala	Gln	Ala	Leu	Gln	Glu	Gln	Gly	Glu	Leu	Lys
			740					745					750		
Val	Ala	Gln	Gly	Lys	Ala	Leu	Gln	Glu	Asn	Leu	Ala	Leu	Leu	Thr	Gln
		755					760					765			
Thr	Leu	Ala	Glu	Arg	Glu	Glu	Glu	Val	Glu	Thr	Leu	Arg	Gly	Gln	Ile
	770					775					780				
Gln	Glu	Leu	Glu	Lys	Gln	Arg	Glu	Met	Gln	Lys	Ala	Ala	Leu	Glu	Leu
785				790					795					800	
Leu	Ser	Leu	Asp	Leu	Lys	Lys	Arg	Asn	Gln	Glu	Val	Asp	Leu	Gln	Gln
			805						810					815	
Glu	Gln	Ile	Gln	Glu	Leu	Glu	Lys	Cys	Arg	Ser	Val	Leu	Glu	His	Leu
			820					825					830		
Pro	Met	Ala	Val	Gln	Glu	Arg	Glu	Gln	Lys	Leu	Thr	Val	Gln	Arg	Glu
	835						840					845			

Gln Ile Arg Glu Leu Glu Lys Asp Arg Glu Thr Gln Arg Asn Val Leu
850 855 860

Glu His Gln Leu
865

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Asp Tyr Lys Asp Asp Asp Asp Lys
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Pro Asp Val Ala Ser Leu Arg Gln Gln Val Glu Ala Leu Gln Gly Gln
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Val Gln His Leu Gln Ala Ala Phe Ser Gln Tyr
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<211> 33
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<400> 22

Arg Met Lys Gln Ile Glu Asp Lys Ile Glu Glu Ile Leu Ser Lys Ile
1 5 10 15

Tyr His Ile Glu Asn Glu Ile Ala Arg Ile Lys Lys Leu Ile Gly Glu
20 25 30

Arg